

to the coating as claimed in the present application, and it is noted that the core of Hurley may comprise ethylene-propylene rubber (col. 9, line 25).

Paragraph 2 of the Office Action then notes that "Hurley teaches the core having a thickness of about 1/8 to 3/8 inch (3.2 to 9.5 mm) (column 7, line 66)." Applicant agrees with this assessment. In contrast, however, claims 1 and 12 recite that the coating has a thickness "ranging from about 1 to about 6 mils." As noted in the specification at page 7, line 16, "1 mil = 0.001 inch." Accordingly, the above-noted passage from Hurley teaches that the core has an equivalent thickness ranging from 125 to 375 mils, which is far thicker than the claimed 1-6 mil thickness range of Applicant's coating.

At page 4 of the Office Action, under "Response to Arguments" (paragraph 4), it is stated that the "thickness of the core in Hurley ranging from 3 to 9 mils overlaps that of the claimed coating (column 9, line 66)." In response, Applicant notes that column 9, line 66 reads as follows: "...EPDM resin, an EVA resin, and a single-site initiated...." This clearly has nothing to do with the thickness of Hurley's core. The Examiner's previous citation to column 7, line 66 of Hurley discloses a core thickness ranging from 1/8 to 3/8 inch, which equates to a thickness of about 3 to 9 millimeters (mm). However, 3-9 mm is far greater than the claimed thickness range of "about 1 to about 6 mils" (which equates to a thickness of about 0.025 to about 0.152 mm).

Accordingly, Applicant respectfully points out that Hurley neither teaches nor suggests the claimed thickness range of the coating of the present invention, and therefore does not establish a *prima facie* case of obviousness against claims 1-21.

Furthermore, with respect to the coating as described in the claims, Applicant has found that a thin coating having a thickness

ranging from about 1 to about 6 mils provides a stronger bond between two polyolefin foam sheets having different chemical compositions than a similar coating having a greater thickness. In order to demonstrate this, Applicant submits herewith a Declaration of N. S. Ramesh under 37 CFR §1.132.

As shown in the Declaration, the bond strength between a polypropylene foam sheet and a polyethylene foam sheet was unexpectedly found to be far greater using a 5-mil coating of ethylene/propylene rubber than a 10-mil coating. Specifically, the bond strength resulting from the 5-mil coating was 4.655 lb<sub>f</sub>/inch, which was 193.5% greater than the bond strength of 1.586 lb<sub>f</sub>/inch provided by the 10-mil coating. Thus, the 10-mil coating could not provide a bond strength adequate to meet the claimed minimum of at least about 4 lb<sub>f</sub>/inch. This is significant because, for commercial applications, a bond strength of at least 4 lb<sub>f</sub>/inch is required.

The unexpected improvement in bond strength resulting from a coating as claimed having a thickness of about 1-6 mils is neither taught nor suggested in Hurley, and provides further evidence of the non-obviousness of the present invention vis-à-vis Hurley and the other references of record.

Finally, for the sake of completeness, Applicant will respond briefly to the two case-law citations set forth in the Office Action. *In re Hutchison*, 69 USPQ 138 (CCPA 1946), is cited at page 2 of the Office Action to support the proposition that the phrase "capable of" performing a function is not a positive limitation and, thus, does not constitute a limitation in any patentable sense. In response, Applicant notes that, although the phrase "capable of" appeared in the claims at issue in *In re Hutchison*, the court did not hold that such phrase was not a limitation

in a patentable sense as alleged in the Office Action. In fact, the court did not criticize the use of such phrase at all.

The main thrust of the holding in *In re Hutchison* was that each of the claims "contain[ed] functional statements which may not be regarded as limiting the claims, they being article claims." *Id* at 141. However, this case was decided in 1946, prior to the 1952 Patent Act. It is now well established that functional language is perfectly acceptable in claims, including article claims. For example, MPEP §2173.05(g) provides that "[f]unctional language does not, in and of itself, render a claim improper." In fact, §2173.05(g) of the MPEP specifically indicates that the negative form of "capable of" is "perfectly acceptable [claim language] because it set[s] definite boundaries on the patent protection sought." Accordingly, *In re Hutchison* is clearly irrelevant in view of current patent jurisprudence, which clearly indicates that Applicant's claim phrase "said coating is capable of bonding said polyolefin foam sheet to a second foam sheet ... at a bond strength of at least about 4 lb<sub>f</sub>/inch" is appropriate functional language that carries as much patentable weight as the other elements of Applicant's claims.

At the sentence bridging pages 2 and 3 of the Office Action, *In re Aller*, 105 USPQ 233 (CCPA 1955), is cited for the proposition that the discovery of optimum or workable ranges involves only routine skill in the art where the general conditions of a claim are disclosed in the prior art. In the instant case, however, the general conditions of the claims are not disclosed in the cited prior art, i.e., Hurley does not disclose or suggest a core thickness range that encompasses the claimed 1-6 mil thickness range of the coating of the present invention. As noted above, Hurley instead discloses a much greater core layer thickness, ranging from 1/8 to 3/8 inch (col. 7, line 66), which equates to a thickness of 125 to 375 mils. Thus, Applicant has not merely discovered an optimum

or workable range within the teaching of Hurley; instead, Applicant has discovered a range that is completely outside the teaching of Hurley. *In re Aller*, therefore, is inapplicable. Furthermore, Applicant has demonstrated that the claimed thickness range produces unexpected results which overcome any *prima facie* case of obviousness that may be said to exist.

For all of the foregoing reasons, Applicant submit that the claims as now presented are patentably distinct from the references of record and are, therefore, in condition for allowance. A Notice of Allowance is earnestly solicited.

Respectfully submitted,

  
Thomas C. Lagaly  
Attorney for Applicants  
Registration No. 34,652

P.O. Box 464  
Duncan, SC 29334  
(864) 433-2333

NOV. 7, 2002

Date